- Step 1: **Scoping**

Introduction

Watershed restoration efforts can vary from site-specific projects using local volunteers to regional, multi-governmental partnerships. The Scoping process helps to organize the leadership of small and large communities and focus them on priority watershed issues. The WAM guide provides guidance on developing a goal-oriented strategy, producing realistic action plans, addressing financial needs, and implementing priority projects. It will also help the watershed group decide how to strategically engage and interact with the local community. This engagement will be critical to effectively improve watershed conditions.

Depending on the needs of the watershed group, each step of the Scoping process can be addressed by following the ordered list of actions or specific actions can be considered individually. In either case, Scoping is by nature an iterative process, and the watershed group will want to periodically revisit the issues addressed in this section.

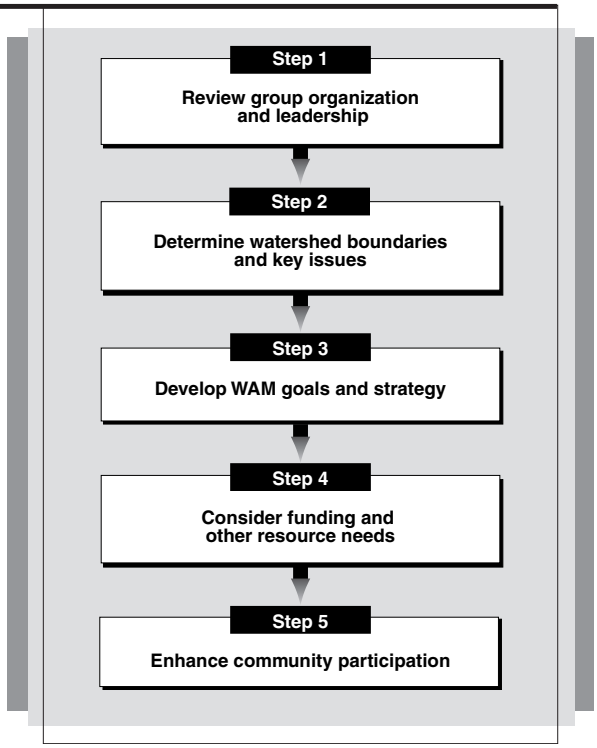
Scoping Process

Step Chart

Procedure

The objectives of the Scoping step are as follows:

- To organize leadership for the WAM process.
- To determine key watershed issues.
- To develop a strategy that addresses priority watershed issues.
- To determine staff and funding needs.
- To determine Watershed Assessment requirements.
- To enhance community participation.



Step 1. Review group organization and leadership

Since each watershed group will have a unique set of people and issues to address, this section cannot provide a specific blueprint for group organization and leadership. Instead, this step identifies important elements to consider in the development and growth of any watershed group (Box 1). The watershed group will need to specifically determine the lines of responsibility and authority for managing various aspects of the watershed program.

Box 1. Choosing WAM project goals

Smaller, less intensive efforts to evaluate watershed conditions can yield important insights about watershed functions and interactions. This type of assessment can help meet a variety of goals:

- Educating the local community about key watershed issues.
- Summarizing current information on watershed conditions.
- Identifying important gaps in knowledge.
- Organizing and prioritizing future actions.
- Conducting pilot projects for monitoring and restoration.

Involving the local community may be particularly important when conducting WAM with limited resources. Staff can often be supplemented with help from local citizens and professionals at county, state, or federal agencies.

Larger, more intensive WAM efforts can provide a more rigorous evaluation to identify cause-and-effect relationships in watershed conditions using science-based assessments. More detailed assessments can help meet goals such as the following:

- Educating and engaging varied interest groups in the watershed.
- Evaluating and supplementing existing watershed information.
- Identifying specific areas that require special management.
- Establishing watershed-specific standards for improved management.
- Planning cost-effective monitoring and restoration projects.

Larger assessments will require more financial and staff resources to manage the process. Soliciting funds from various state and federal grants may be an important part of this process.

- The size of the organization necessary to achieve watershed restoration objectives is typically proportional to the size of the watershed area. A small watershed group working in a large watershed area may want to consider focusing efforts on a smaller area, such as the watershed of a major tributary. Large watersheds generally require a more complex organization to address varied land management issues and resource conditions.

- Most watershed partnerships will involve a number of different interest groups. It will be important to ensure adequate representation for all groups likely to be affected by the watershed management process. However, the social and political dynamics may require a staged approach starting with a small group of like-minded participants and eventually expanding to become more inclusive of all watershed interests. Ultimately, resolution of watershed management issues will depend upon the collaboration of all interested parties.

- A community-driven watershed group will typically have better success engaging key local landowners than will outside agencies or specific interest groups. Whether the watershed group is just starting out or has a long history, establishing and maintaining communication with key landowners or interest groups will be a vital, on-going task to meet watershed restoration objectives.

- The organization and leadership of many watershed groups relies upon government staff and funding, yet important segments of the community may inherently mistrust government involvement. The organization and leadership of the watershed group should be structured to ensure a community-driven prioritization and decision-making process in the context of current rules and regulations.

- Science should play an important role in providing credible information to the watershed management process, but community representatives should ultimately make decisions about watershed priorities and land management changes. The organization and leadership of the watershed group should explicitly address the way in which scientific information will be used in the decision-making process.

- Many larger watershed partnerships are organized with separate policy and technical committees, but completely separating these groups often leads to miscommunication and other problems. Some policy representation at the technical level and technical representation at the policy level can help to maintain good communication and ensure an effective and efficient process.

- Common characteristics of effective watershed groups include being 1) results-oriented, 2) truth-seeking, 3) consent-based, and 4) adaptable (Pajak 2000). Results-oriented means establishing clear, measurable objectives and regularly evaluating results. Truth-seeking focuses on understanding watershed status and trends using credible science. Consent-based groups are generally driven by the local community and involve all stakeholders. Finally, adaptable means the group can work on watershed issues at a small and large scale and use new information to adapt management efforts.

Step 2. Determine watershed boundaries and key issues

The WAM methodology can be applied to any size area and at various scales, depending on the objectives identified. Watersheds are a convenient unit of area for water-related concerns since they typically define the area that can influence surface water. Some areas of the United States, such as the arid Southwest or the limestone-dominated parts of the Southeast, may not have easily defined topographic boundaries, so other assessment boundaries may be necessary. Specific environmental issues often dictate the size and boundaries of the watershed under consideration, but where feasible, focusing on smaller watershed areas on the order of tens of square miles is generally most productive (Box 2).

Box 2. Hydrologic unit codes and watershed boundaries

Hydrologic unit codes (HUCs) developed by the U.S. Geological Survey (USGS) are commonly used by state and federal agencies for defining watersheds at various scales. Most watershed data from agency reports and web sites are organized by HUC. While HUCs may represent scales that are useful for natural resource management, they often do not coincide with the topographic boundaries of the watershed. Where possible, the topographic boundary of the watershed, rather than administrative boundaries, should be used to define the assessment area.

HUCs are based on a four-level classification system that divides the United States into successively smaller hydrologic units. Each hydrologic unit is identified by a unique HUC consisting of two to eight digits based on the four classification levels. The NRCS, together with other state and federal agencies, has further delineated fifth- and sixth-level watersheds in many states. HUCs for these additional watershed levels consist of 11 and 14 digits, respectively, and represent a scale of a few hundred to tens of square miles. Fifth- and sixth-level HUCs are generally a good scale for WAM projects.

Example of HUCs from South Carolina (Bower et al. 1999)

Hydrologic Unit Level	Hydrologic Unit	Hydrologic Unit Name	Hydrologic Unit Area (mi^2)	HUC
1st	Region	South Atlantic Gulf	—	03
2nd	Subregion	Edisto-Santee	23,600	0305
3rd	Accounting Unit (Basin)	Santee	15,300	030501
4th	Cataloging Unit (Sub-basin)	Enoree	731	03050108
5th	Watershed	Unnamed	82	03050108040
6th	Subwatershed	Unnamed	41	03050108040010

Most watershed groups form because of concerns about a specific watershed issue or in response to land management or regulatory changes. The watershed group will need to agree on the issues to be addressed as part of the WAM process (Box 3).

Box 3. Key issues for the Marshland watershed community, Snohomish County, Washington

Flood control and floodplain drainage have traditionally been the largest environmental and economic resource issues in the Marshland watershed. A levee system along the Snohomish River protects farmland and residents from smaller floods, but larger floods have caused significant agricultural and property damage. A network of ditches, a large canal, and a pump plant are used to drain the area and lower the water table to take advantage of the productive floodplain soils. Unfortunately, these projects have blocked access for salmon and drained wetlands that served as important fish and wildlife habitat.

The Marshland watershed has also experienced significant population growth in the last 20 years. The cumulative impacts of increased development on environmental resources, such as water quantity and quality, have not been well addressed. The Marshland Flood Control District faces problems of tributary stream flooding, sediment deposition, and erosion of streams and ditches as a result of both natural processes and recent development in the Marshland uplands. The increased volume of water from residential development also increases the pumping costs for the District to remove water from their fields. Other land management activities, such as forest removal, brush control, draining of wetlands, erosion from fields, and fertilizer and chemical runoff have caused water quality problems and reductions in fish and wildlife populations.

Chinook salmon and bull trout have been listed as threatened species under the Endangered Species Act. Several other wild salmon stocks in the Snohomish River basin are also considered at risk. All of these stocks currently use habitat in the Snohomish River valley and historically used habitat within the Marshland watershed. The Marshland floodplain area could provide critical habitat for the restoration of salmon runs in the Snohomish River basin.

The key issues for the Marshland watershed can be summarized into the following four categories:

1. Fish access and habitat restoration to protect endangered salmon.
2. Maintenance of flood and drainage control to protect homes and agricultural lands.
3. Mitigation of urban development impacts on water runoff and erosion.
4. Improvement of water quality.

The watershed issues identified may be recorded in Form SC1 (Figure 1). Table 1 provides examples of possible watershed issues by land use.

Figure 1. Sample Form SC1. List of watershed issues

Watershed Issue	Affected Resources	Possible Causes
1. Fish can no longer be eaten because of high levels of pollutants	• Bass, salmon, trout • Food and cultural resources important to tribes • Community recreation	• Pulp and paper mill effluent • Stormwater runoff • Naturally high mercury levels
2. Bank erosion and channel entrenchment limit land productivity and degrade water quality	• Loss of farmland • Damage to county road • Loss of cultural sites • Loss of forested floodplain habitat • Reduction in stream habitat	• Larger floods due to urbanization • Inadequate forested buffers along streams • Dikes and dredging • Historical channel straightening

Table 1. Examples of possible watershed issues

Land Use	Aquatic Resources	Water Quality
Agriculture	Fish migrate into drainage ditches where dissolved oxygen levels are too low to support fry emergence.	During spring rains, herbicides run off fields into nearby creek, increasing dissolved nitrogen levels.
Urbanization	New development requires that a formerly unconfined channel be taken underground.	Surface water runoff during spring thaw deposits sediment and road salt into nearby tributary.
Forestry	Increased forest road development and increased culvert placement reduce fish passage for endangered fish.	Deforested watershed contributes sediment to channel.
Mining	Mine tailings with arsenic and other heavy metals contaminate important trout habitat.	Heavy metals concentrations exceed water quality criteria in streams.
Grazing	Dense concentrations of cattle disturb sensitive springs and amphibian habitats.	Nutrient loading from animals have increased algal blooms in slow-moving waters.

Step 3. Develop WAM goals and strategy

Once the watershed group has discussed the key issues, specific goals for the watershed should be identified and refined. Defining watershed goals is one of the most important parts of the WAM process. Both short- and long-term goals for the WAM process may need to be discussed. The watershed group may start by defining broad goals for the organization, which are often described in a "mission statement" or other "statement of purpose." Broad goals can be useful for communication and interaction with diverse interest groups.

More specific goals, however, are usually of greater help for guiding the actions of the watershed group (Box 4). Consider goals that are measurable and attainable over a five- to ten-year period. The group may also benefit from having more project-specific goals that are part of an annual work plan.

Simply and clearly stating the goals of the group will be an important and effective tool for communication with the community, as well as an important way to measure progress. Also, keep in mind that the determination of watershed goals is an iterative process, and the goals will likely be refined as more information is gathered and stakeholders interact more productively.

Box 4. Examples of broad aquatic resource goals and considerations for refining the goals

- Protect drinking water sources.
  - Consider surface water or groundwater.
- Protect critical aquatic habitat.
  - Define critical areas.
  - Consider options for protection (e.g., acquisition, easement, regulation).
- Restore important aquatic habitat.
  - Identify priority areas.
  - Identify potential types of restoration measures.
- Build public understanding and support in watershed improvement efforts.
  - Target key landowners and businesses.
  - Develop educational programs with schools.
  - Create a website and publish a newsletter.
- Protect waterbodies to meet state water quality standards.
  - Identify potential sources of impairment.

Watershed groups often underestimate the amount of time and effort required to accomplish watershed goals. The group should be realistic about current and expected future resources. Small local groups can initiate straightforward improvements through citizen outreach and watershed stewardship programs, whereas larger-scale changes to infrastructure or regulation will require representation by multiple agencies and community leaders (Boxes 5 and 6).

Box 5. Choosing WAM project goals

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Once the watershed goals are defined, the group should develop their strategy or "action plan." The strategy is the process or the steps to be taken to achieve the previously identified goals. The strategy will help define the focus of efforts in more detail and should give guidance on prioritizing projects. A basis in science will help increase the credibility of the strategy, but community values are an equally important consideration in ensuring the long-term commitment necessary for effective watershed improvements.

Box 6. Project goals for the Little Miami River watershed, Clermont County, Ohio

During the development of Clermont County Project XLC, Ohio EPA and a stakeholder committee worked with Clermont County to evaluate ten issues related to the water quality in the East Fork Little Miami River (EFLMR) watershed. An emphasis was placed on considering nontraditional solutions, such as seeking regulatory flexibility from state and federal authorities. The ten issues were as follows:

1. Renew and periodically review NPDES permits in the County's watershed (Milford waste water treatment plant (WWTP), Lower East Fork WWTP, Middle East Fork WWTP, Batavia WWTP, Williamsburg WWTP) based on new water quality findings and determinations.
2. Evaluate the feasibility of point/point trades within the EFLMR to optimize nutrient control between facilities.
3. Consider the development of point/non-point source trading to achieve better controls of nutrients in the watershed, possibly in coordination with Ohio EPA's EFLMR TMDL project.
4. Explore summer low flow augmentation from Lake Harsha to release higher dissolved oxygen waters to improve biological conditions and reduce stress.
5. Review permit options to include seasonal nutrient removal limits.
6. Expedite possible innovative on-site wastewater treatment, disposal and management options for areas of failing or discharging on-site systems.
7. Review the possibility of new discharge to the Little Miami River to accommodate treatment of wastewater from areas with known failing on-site systems.
8. Explore potential for County ownership and management of on-site systems.
9. Evaluate riparian land controls for water quality protection.
10. Non-traditional non-point source control of water quality.

To be placed into the proper context for problem solving, each issue needed further development to identify who needed to be involved in the process (e.g., stakeholders; specific local, state, or national regulatory agencies), what the most appropriate methods for investigating the issue were, and whether the County could perform the work or consultants would be needed.

The strategy is an action plan for the next 10 to 20 years that allows the watershed group to be strategic, rather than opportunistic, in their watershed recovery efforts. The rationale for choosing certain priorities or actions should be clearly stated within the strategy. The following elements may be helpful in crafting a site-specific watershed strategy:

- **Geographic Priorities:** Are certain sub-basins or stream reaches of particular importance (e.g., unique, productive, critical habitat component) based on best available knowledge?

- **Community Priorities:** Are recovery efforts in certain areas important to engage community support for the entire watershed?

- **Assessment:** What information gaps will need to be filled in order to prioritize or implement recovery efforts?

- **Protection:** Are there priority areas where current practices are ineffective in protecting watershed resources?

- **Restoration:** Is the focus on protecting intact, high quality habitat or restoring historically productive habitat?

- **Monitoring:** How will the group measure progress in achieving the watershed objectives?

- **Community:** How will key landowners and community leaders be engaged to participate in priority watershed protection and recovery efforts?

The strategy should be summarized in no more than a few pages so that the community can easily understand the rationale and outcomes of implementing the strategy (Box 7).

Step 4. Consider funding and other resource needs

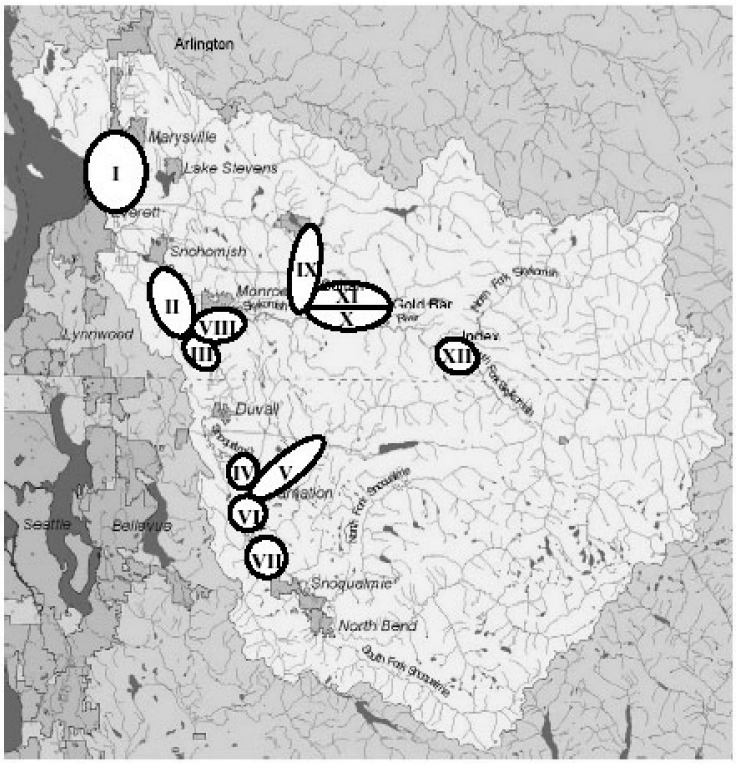
The financial resources available to a watershed group can vary significantly. However, even groups with minimal resources can conduct important elements of the WAM process and significantly improve watershed conditions. Many of the tools and methods described in the WAM process rely on local expertise and relatively inexpensive materials. Professionals from local government agencies, colleges, and universities are often available to help collect and interpret information. Community outreach will be a key component for watershed groups to recruit volunteers and other contributions.

Box 7. Developing a protection and restoration strategy for the Snohomish River basin, Washington

Focus Area Concept

In the Snohomish River basin, "focus areas" support high levels of spawning, rearing, holding, or refuge for chinook salmon. Focus areas are determined from biological data on the level of habitat use. In addition to areas with high current use, other important areas include sites of high historical but low current use and sites with high but inconsistent use (map).

Near-term focus areas for restoration and protection projects



Selection of Focus Areas

Local experts, including state and tribal biologists, compiled salmon distribution data to identify areas that support high densities of chinook salmon. These focus areas will become the building blocks for salmon conservation in the watershed. Future efforts will 1) link the focus areas to other current and historical fish habitat, 2) link areas that maintain the watershed processes important to supporting high quality salmon habitat, and 3) extend this strategy to address the habitat needs of bull trout, coho, and other salmon species.

Habitat Condition Analysis

Habitat conditions were analyzed to help choose the appropriate type of protection and restoration projects. Local experts performed the analysis with a panel of five scientists reviewing their work and conclusions.

Project Identification

Watershed stakeholders identified specific projects in the focus areas based on the characterization of current habitat conditions. Participants used aerial photographs and detailed maps showing natural features, such as wetlands, and land use information, such as dike locations and zoning boundaries. The participants also considered linkages between past and future projects, time-sensitive opportunities and risks, and whether key watershed processes were intact.

Strategic Project List

A basin-wide workshop was held to review suggested projects for each focus area and to develop a strategic list of project ideas. Land acquisition or conservation easements along riparian corridors are a key part of the habitat strategy, as are more complex restoration projects, such as the removal or modification of flood control levees. Many of these projects will require detailed feasibility studies to address issues such as public safety and the protection of homes, businesses, farmland, and infrastructure. Restoration projects will require working with key landowners and building community support.

(Adapted from *Snohomish Basin Salmon Recovery Forum 2001*)

Box 8. Federal granting agencies

The following federal agencies manage grant programs that may help to support watershed-related work:

- U.S. Army Corps of Engineers
  - Section 206 Program
  - Section 22 Program
- U.S. Department of Agriculture, Natural Resources Conservation Service
  - Wetland Reserve Program
- U.S. Environmental Protection Agency
- U.S. Geological Survey
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
  - Community-Based Restoration Program

Some watershed groups may reach a stage at which increased funding will be necessary to accomplish their goals. Financial grants are commonly available from various private and public institutions, including local, state, and federal government agencies (Box 8). The group should understand that the process for acquiring and managing a financial grant might take a large amount of effort and supplemental resources. Project development, project management, and administrative requirements can be significant for many grant programs. Local government agencies and non-profit organizations may have staff with experience in grant writing and administration.

The time frame and resource needs for conducting the WAM process will depend on the watershed issues, the project goals, and the scale of the assessment. The actual time and costs associated with the WAM process will vary depending on the following factors:

- Size of the watershed.
- Availability of staff and resources.
- Amount and accessibility of existing data and information.
- Complexity of the ecological and management conditions in the watershed.
- Amount of work needed to achieve acceptable levels of confidence.

WAM outlines a framework for evaluating environmental problems and developing effective management solutions that should increase opportunities for funding. Involving the local community, understanding ecological processes, and using defensible, science-based assessment are important elements for many state and federal grants. Groups can also take advantage of in-kind support from public agencies or citizen groups through cooperative projects, cost-share programs, or technical assistance, rather than seeking additional grants.

The *Catalog of Federal Funding Sources for Watershed Protection* (U.S. Environmental Protection Agency [EPA] 1999) lists a variety of federal monetary grants with contacts and internet sites to obtain further information. It also provides a list of publications and private, non-profit organizations that may provide additional sources of funding.

Step 5. Enhance community participation

The most effective watershed groups across the country actively engage and involve the local community. Building support in the community to better address watershed issues is vital to implement effective, long-term solutions. Cooperators such as local, state, and federal agencies may be able to provide staff and other valuable resources to strengthen the watershed recovery efforts. If the results of the WAM process are to influence regulatory decisions, support applications for public funding, or have credibility in the affected communities, full community participation is desirable.

The following potential participants may be vital to the WAM process (EPA 1997):

- Private companies and landowners whose livelihoods depend on watershed resources.
  - Farmers and ranchers.
  - Fishermen.
  - Timber companies.
  - Developers.
  - Fishing and hunting guides.
  - Utility companies.

- Offices of local, state, tribal, and federal governments.
  - Local watershed organizations and conservation districts.
  - State and county departments of environmental protection.
  - NRCS.
  - USDA Forest Service (USFS).
  - EPA.

- Organizations that use the watershed or that are concerned with watershed or land use issues.
  - Water recreation organizations.
  - Public health organizations.
  - Community economic development organizations.
  - Environmental groups.

Conducting Community Meetings to Enhance WAM Participation

Depending on the size of the watershed and the population distribution, one or more Scoping meetings can help inform and engage the local community (Box 9). The objectives of the Scoping meeting are to 1) provide an open forum for public input, 2) prioritize watershed issues, and 3) provide ideas on watershed goals. The focus of the meeting should be to share information and generate ideas in a neutral and cooperative atmosphere.

Box 9. Citizen involvement, Flagstaff, Arizona

The City of Flagstaff needed to update its growth management guide. The city brought together the USFS, the State Land Department (which managed properties within the city boundaries), and the National Park Service (which was slated to expand its boundaries). The initial issue on the table was the interface of open space and urban areas. Through discussion, however, other issues arose, such as the migration of elk and other large animals across highways and through residential areas, development pressures, and floodplain protection.

Although local, state, and federal agencies did much of the preliminary work, the group quickly opened the process to community participation. Participation was encouraged from city and county representatives, the Native American population, the Sierra Club, Northern Arizona University, and the citizens of Flagstaff. As the group grew and opinions were shared, the actual goals of the group evolved, incorporating a more complete set of concerns from the community.

Adapted from EPA (1997)

Collect background material

Maps, individually or in atlases, and other basic watershed information are readily available from map stores, university libraries, natural resource agencies, and the Internet. The EPA's "Surf Your Watershed" website (***http://www.epa.gov/surf***) is a good place to start collecting maps and other watershed information. The NRCS (***http://www.nrcs.usda.gov/TechRes.html***) and the USGS ***(http://mapping.usgs.gov)*** are also good sources for maps and other landscape information (Box 10).

Box 10. Create an information management system

Documenting the decision-making processes, storing map data, cataloging information, and sharing information are key components of WAM QA/QC. The following tools can be used to facilitate information management:

- GIS to store map data and generate maps.
- Computer databases to store information.
- Electronic mail list serve or web site to facilitate communication.

Depending on the size of the watershed and complexity of watershed issues, it may be helpful to choose one person whose main responsibility is to manage the storage and flow of information.

The following materials are helpful for most Scoping meetings and should be prepared prior to the meeting:

- **Base map.** A topographic or GIS map with watershed boundaries, administrative locations (township boundaries, towns, highways, or other sites to help orient people), and larger waterbodies (streams, lakes, wetland complexes).
- **Land use map.** A large-scale map that generally identifies the locations of various land uses in the watershed. Land zoning maps may be a useful source for this information.
- **Land ownership map.** A map that shows the general ownership pattern. A simple map that differentiates between public and private lands may be sufficient.
- **Ecoregion map.** A map that shows areas with relatively uniform ecological systems (Box 11).
- **Environmental maps.** Other readily available maps of vegetation communities, wetlands, geology, soils, or precipitation may be useful.
- **Watershed resources map.** A map that generally shows the location of important community resources, such as swimming areas, drinking water sources, and critical fish and wildlife habitat. This map can be refined during the Scoping meeting to capture all important community resources.
- **Environmental reports.** General reports on past and present environmental characteristics such as water quality, aquatic habitat, water use, flooding history, climate patterns, erosion, wetlands, or vegetation are often available from environmental impact statements, hydroelectric dam licensing reports, and other watershed assessments.

Box 11. Ecoregions

Ecoregions are defined as areas with a relatively uniform pattern of terrestrial and aquatic ecological systems. Delineation of ecoregions can help resource managers better understand regional relationships of climate, topography, geology, soils, and vegetation that influence aquatic habitats. Ecoregions can be an effective aid for inventorying and assessing environmental resources, setting resource management goals, and developing biological criteria and water quality standards. Omernik and Bailey (1997) provide a good discussion of the differences between ecoregions, watersheds, and hydrologic units.

Two similar approaches to ecoregion mapping from the EPA (Omernik 1995) and the USFS (Bailey 1987, 1995a, 1995b) are readily available. For a description of the EPA's approach to ecoregion mapping consult the website at ***http://www.epa.gov/bioindicators/html/usecoregions.html***. Level III and IV mapping will be most useful for WAM. For information on the USFS approach to ecoregion mapping, consult the publication "Ecological Subregions of the United States" (***http://www.fs.fed.us/land/pubs/ecoregions/ecoregions.html***). Ecoregion mapping at the section or subsection scale will be most useful for WAM. This report also has an extensive bibliography with maps and other information on landscape characteristics organized by region.

- **Photographs.** Standard and aerial photographs are often useful for illustrating various watershed conditions or issues.

Organize meeting logistics

Depending on the scale and amount of community participation for the Scoping meeting, the following preparations may need to be made:

- **Select a convenient time and location.** An evening meeting may be necessary to get full community participation. A neutral meeting place such as a school or community center may be preferable to government agency offices.

- **Develop an agenda.** A list of discussion topics and a schedule should be provided prior to the meeting. Try to solicit speakers from various agencies and interest groups to share information and discuss projects being conducted in the watershed.

- **Prepare meeting notices and invitations.** The Scoping meeting can be advertised in local newspapers, newsletters, or other public forums. Invitations to community groups or individuals may also be sent out along with an information packet. The information packet could include one or more of the following items:

  - A general watershed map.
  - A summary of watershed issues.
  - A synopsis of the WAM process.
  - A meeting agenda.
  - A questionnaire about community concerns.

- **Promote focused discussion.** It will be important to clearly define objectives for the meeting and encourage sharing of ideas and opinions by asking questions and checking for consensus. Consider which issues may have the greatest potential for conflict between stakeholders. For example, conflicts often arise between rural and urban communities, which may have different land use interests. A facilitator may be helpful for mediating discussions and staying on schedule.

- **Record ideas and minutes for meeting.** Two people will often be needed to help record ideas on a flip chart and to summarize the minutes of the meeting. For less formal meetings, volunteers from among the Scoping participants may be used to help record this information.

The following sources provide more information on conducting such meetings:

- *Leadership Skills: Developing Volunteers for Organizational Success* (Morrison 1994).
- *Solving Community Problems by Consensus* (Carpenter 1990).
- The "Know Your Watershed" website (***http://www.ctic.purdue.edu/KYW***).

Conduct meeting and prioritize key watershed issues

One crucial output from the Scoping process is the discussion of key watershed issues and how human activities may be impacting community resources. The watershed issues should outline the perceived connections between human land uses, the response in watershed conditions, and community resource impacts.

Visually displaying the location of community resources and areas of concern can be a useful organizational and learning tool for meeting participants. To promote interaction and discussion, participants can be asked to draw locations of community resources directly onto a land use map. Alternatively, the land use and watershed resource locations can be combined on one map or placed on clear mylar to allow for map overlays. Any other readily available information on the watershed can also be used in a map overlay fashion to illustrate connections between landscape and resource conditions.

If the watershed group has already identified their key watershed issues, the issues should be shared with the larger watershed community. Community participants may identify new issues or emphasize different aspects of issues that will require changing or broadening the WAM goals. Be sure to create goals consistent with the commitment of stakeholders and the availability of funding and other resources. Once the WAM goals are finalized, record them on Form SC2.

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Form SC1. List of watershed issues

Watershed Issue	Affected Resources	Possible Causes

Form SC2. WAM project goals

Project Goal	Assessment Level